

Work Order ID 157977

Monday, March 06, 2017 2:59:59 PM

157977

Page 1

Item ID: D117-762-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 3/10/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/22/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED

Approvals: Process Plan:

DAS
21
9-89

Date: MAR 06 2017 Tooling:

Date:

Run Start ***NR1***

QC:

Date: SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID Tool # Plan
Code Accept Reject Reject Insp.
Qty Qty Number Stamp

Draw Nbr

Revision Nbr

D3582

D

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D117-762-041 CHG002

N/A

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

0.00

130

Skidtubes

Skidtubes

Memo

0.17

Skidtubes

1-Cut Aft end using DT8185

2-Deburr ends

3-Drill Aft Cap holes using DT8678 *** OPEN AFT CAP HOLE TO .187" ***

4-Locate DT 8973 from aft cap holes & Drill Ground wire hole on top of Tube.

5-Install 3/16 cleco in Ground wire hole then drill all X-Bolt holes using 3/16" drill.

6-Drill pilot holes for wearplates using DT8900

7-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582.

8- open ground wear holes to 0.391" as per section B-B

9-Open Aft Cap holes using .209" drill.

10-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65 and 5.906 measurements are respected. Double check before drilling. do not open holes to finish size.

11- Open hole to 0.755" as per dwg and Section F-F for swaging and deburr per QSI002.

1 0 17-03-07

DQA: _____ Date: _____



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Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
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QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

140

Skidtubes

Skidtubes

0.00

Memo

0.06

1-Weld fwd cap D2964 per dwg D3582 and QSI 004

A/R AL ROD

Batch:

2-Grind flush

MB662/MB6158

1

*BE**17-03-07*

150

150

QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

1

DAS
38
9-89

MAR 10 2017

160

160

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

1

DAS
38
9-89

MAR 10 2017

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WORK ORDER NON-CONFORMANCE / UPDATE

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1

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Reference: SCHEDULED

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

Chemical Conversion Coat per QSI005 4.1

0.00

170

HandFinish

Memo

0.13

Hand Finishing

(X1)

Q

20170313
BEB

180

QC7-Inspect Chemical Conversion Coat

0.00

180

QC

Memo

0.00

Quality Control

DAS
03
9-00

DD, 7-3-13

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : _____									

Work Order ID 157977

Monday, March 06, 2017 2:59:59 PM

157977

Page 5

Item ID: D117-762-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 3/10/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/22/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

0.00

190

Skidtubes

0.14

Skidtubes

Memo

***MASK OFF HOLES OF SECTION F-F (DO NOT C'SINK) ✓

1-Open X-Bolt holes to finish size as per Dwg D3582, sections D-D, E-E ✓

2-Counter Sink X-BOLT holes as per Dwg D3582 D-D AND E-E ONLY ✓

3-Deburr and blow out chips from inside of tube, prep. tube for welding. ✓

4-Bond web as per Dwg D3582 & QSI 015

A/R 241 Sike Flex

Batch:

Exp Date:

5- Swage x-bolt spacer as per dwg and Section F-F QSI002

6-Weld x-bolt spacers as per Dwg D3582 section D-D, E-E and G-G.

A/R AL ROD

Batch:

7-Grind welds flush

17-03-13
J.T.

17-3-20

BE 17-03-16

BE 17-03-14

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

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Page 6

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Approvals: Process Plan:

QC:

Date:

Date:

Accept

Tooling:

SPC (Y/N):

N900040100

Cust Item ID:

Customer:

Setup Start ***NS1***

Stop ***NS2***

Run Start ***NR1***

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

200

QC10- Inspect visual per QSI004- ground welds

0.00

200

QC

Memo

0.00

Quality Control

DAS
38
9-89
MAR 21 2017

210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

Quality Control

DAS
38
9-89

MAR 21 2017

215

Pressure Wash per QSI005 4.3

0.00

215

HandFinish

Memo

0.08

Hand Finishing

Touch-up alodine as per QSI

(X1) 

20170612
BEB

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Page 7

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Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

220*M 137176.*

Powdercoat

Memo

0.03

Powder Coating

START TIME 1:55
OVEN TEMPERATURE 320°
FINISH TIME: 2:05*1 of 1706-12*

230

QC3- Inspect Part Finish

0.00

230

QC

Memo

0.00

Quality Control

*1 x of 17106/12***DAS
15
9-00**

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Misidentified ☐	Past Due ☐						

Work Order ID 157977***157977***

Page 8

Monday, March 06, 2017 2:59:59 PM

Item ID: D117-762-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 3/10/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/22/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

250

0.00

250

HandFinishing

HandFinish

Memo

0.26

Hand Finishing

1-Inspect for Foreign objects

2-Install Aft cap as per Dwg D3582, Detail "C"

A/R 241 Sika Flex Batch: M137567
Exp Date: 1810

3-Install Wearplates as per Dwg D3582,

Note:Install Bolt and washer on Ground Wire inserts on top of tube see
section D-D of dwg D3582

*****Do not install bolts where indicated on Dwg(Note #6)*****

A/R 241 Sika Flex Batch: M137567
Exp Date: 18104- Wing Walk as per Dwg D3582 and QSI 005 4.4 M137465

260

QC5- Inspect part completeness to step on W/O

0.00

260

QC

Memo

0.00

Quality Control

DAS
38
-89

JUN 14 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 157977***157977***

Page 9

Item ID: D117-762-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 3/10/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/22/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

0.00

270

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D117-762-041
Location :FG081DAS
27
8-89

JUN 14 2017

PPP168405

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.02

Quality Control

17/6/14 JH



JUN 14 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐						OTHER : ☐	

Picklist Print

Monday, March 06, 2017 3:00:04 PM

Page 1

Work Order ID: 157977

157977

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:A07.06.11New Issue EC
IPP Rev:B 08-02-22 change to revA as per dwg DD verF by:EC IPP REV:C
15.06.11 AS PER CHG002 DD VERF:JLM IPP REV:D 16.02.05
DWG REV.C (ecn16-514) DD VERF:JLM IPP REV:E 17.01.17 as per dwg
REV.D DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D5304-1		Manufactured	No			190	Each	26.0000	2	2			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D5304-1

Crossbolt Spacer

Location	Loc Qty	Loc Code
LG001	26	
145050	16	
146516	10	

D3582-1-BENT		Manufactured	No			130	Each	1.0000	1	1			
--------------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

D3582-1-BENT

Skidtube Assembly BK117

Location	Loc Qty	Loc Code
LG002	1	
155913	1	

D2964		Manufactured	No			140	Each	7.0000	1	1			
-------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

D2964

Cap

Location	Loc Qty	Loc Code
LG001	7	
153488	7	

17-3-16

BE17-03-07

BE17-03-07

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : ☐							

Picklist Print

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Page 2

Work Order ID: 157977

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

157977

D117-762-041

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

D2971

Manufactured No

190

Each

37.0000

1

1

D2971

Cross Bolt Spacer

**

861703-15

Location

Loc Qty

Loc Code

LG001

37

155918

37

D2965

Manufactured No

250

Each

46.0000

1

1

D2965

Cap

**

17/06/12

Location

Loc Qty

Loc Code

FP001

46

127852

46

D3584-1

Manufactured No

190

Each

1.0000

1

1

D3584-1

Web

**

17-03-13
21.

Location

Loc Qty

Loc Code

LG002

1

155919

1

D3662-3

Manufactured No

190

Each

65.0000

1

1

D3662-3

Crossbolt Spacer

**

861703-15

Location

Loc Qty

Loc Code

LG001

65

105725

15

71026

3

81606

47

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Shop Packet Print

Page 2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
		OTHER : ☐							

Picklist Print

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Page 3

Work Order ID: 157977

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

157977

D117-762-041

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

D3662-1

Manufactured No

190

Each

15.0000

3

3

D3662-1

Crossbolt Spacer

**

BL1703-15

Location

Loc Qty

Loc Code

LG001

15

15

250

Each

4,508.000

36

36

ALS4-1032-130

AELS4-1032-130

Purchased

No

AI S4-1032-130

Rivnut

**

ll 17/06/12

Location

Loc Qty

Loc Code

CCK007

4286

M136579

4286

FG

50

FG

M135442

50

FP001

172

M133077

72

M135442

100

ALS4-428-165

Purchased

No

AI S4-428-165

INSERT

250

Each

65.0000

2

2

**

ll 17/06/12

Location

Loc Qty

Loc Code

FG

10

117769

10

FP001

55

117769

5

m136986

50

X2

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Page 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

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Page 4

Work Order ID: 157977

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

157977

D117-762-041

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

D3508-3 Manufactured No

250 Each

5.0000 1 1

D3508-3

Wearplate Fwd Center

**

del 12/06/12

Location

Loc Qty

Loc Code

FP002

5

155270

1

155923

4

X1

D3508-9 Manufactured No

250 Each

6.0000 1 1

D3508-9

Wearplate Fwd

**

del 12/06/12

Location

Loc Qty

Loc Code

FP002

6

153483

1

155263

1

155922

4

X1

D3558-3 Manufactured No

250 Each

15.0000 1 1

D3558-3

Gasket Center Fwd

**

del 12/06/12

Location

Loc Qty

Loc Code

FG

1

89649

1

FP001

14

144377

14

X1

D3558-9 Manufactured No

250 Each

6.0000 1 1

D3558-9

Gasket Fwd

**

del 12/06/12

Location

Loc Qty

Loc Code

FG

1

80340

1

FP001

5

148742

5

X1

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Page 4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

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Work Order ID: 157977

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

157977

D117-762-041

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

D3558-11

Manufactured No

250

Each

4.0000

1

1

D3558-11

Gasket Aft Center

**

all 17/06/12

Location

Loc Qty

Loc Code

FG

1

B157593

80339

1

xl

FP001

3

148716

3

D3558-13

Manufactured No

250

Each

6.0000

1

1

D3558-13

Gasket Aft

**

all 17/06/12

Location

Loc Qty

Loc Code

FG

1

82380

1

FP001

5

155712

5

xl

D3508-11

Manufactured No

250

Each

6.0000

1

1

D3508-11

Wearplate Aft Center

**

all 17/06/12

Location

Loc Qty

Loc Code

FP002

6

155239

2

155905

4

xl

D3508-13

Manufactured No

250

Each

6.0000

1

1

D3508-13

Wearplate Aft

**

all 17/06/12

Location

Loc Qty

Loc Code

FP001

6

143628

6

xl

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Work Order ID: 157977

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

157977

D117-762-041

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0332J

Purchased

No

250

Each

1,086.000

2

2

NAS1149D0332.J

Washer

**

all 12/06/12

Location

Loc Qty

Loc Code

FP001

8

M137075

x2

m134848

8

GA

600

m136643

600

ST264

478

m136015

478

AN3C4A

Purchased

No

250

Each

667.0000

28

28

AN3C4A

Bolt

**

all 12/06/12

Location

Loc Qty

Loc Code

FG

20

122814

20

M137361

x28

FP001

125

M136450

23

M136740

102

OVER002

350

M136986

350

ST350

172

M135704

172

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Picklist Print

Monday, March 06, 2017 3:00:04 PM

Page 7

Work Order ID: 157977

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

157977

D117-762-041

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

AN3C5A Purchased No

250 Each

812.0000 2 2

AN3C5A

Bolt

**

all 17/06/17

Location

Loc Qty

Loc Code

FG 5

I22800 5

FP001 236

M136648 236

OVER002 400

M136182 100

M136450 200

M136579 100

ST350 171

M134676 1

M135442 170

X1137361

X2

NAS1149D0416J Purchased No

250 Each

3,858.000 2 2

NAS1149D0416.J

WASHER

**

all 17/06/17

Location

Loc Qty

Loc Code

GA 803

m131511 803

ST264 3055

m131511 3055

X2

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Shop Packet Print

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Picklist Print

Monday, March 06, 2017 3:00:04 PM

Page 8

Work Order ID: 157977

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

157977

D117-762-041

Start Date: 3/10/2017

Required Date: 3/22/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

250

Each

3,791.000

28

28

NAS1149C0332R

WASHER

**

el 17/06/17

Location

Loc Qty

Loc Code

FP001

182

M137593

x28

m126319

54

m127831

54

m136537

28

m136741

46

GA

532

m133284

32

m136444

500

ST260a

2700

m135408

0

m135766

500

m135908

200

m136042

500

m136643

1000

m136975

500

ST266

377

m135466

377

AN4-4A

Purchased

No

250

Each

37.0000

2

2

AN4-4A

BOLT

**

el 17/06/17

Location

Loc Qty

Loc Code

ST346

37

m129390

37

M137391

x2

Monday, March 06, 2017 3:00:04 PM

Shop Packet Print

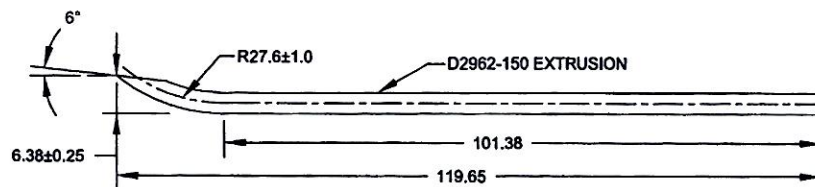
Page 8

PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

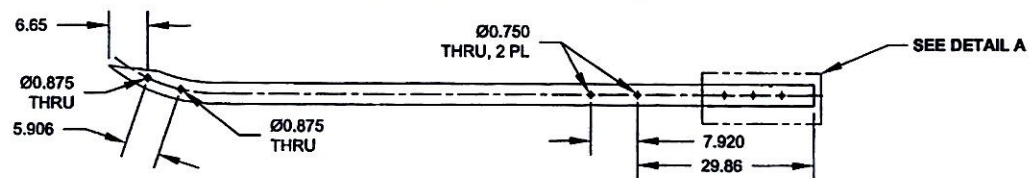
Qty	Part Number	Description
X	D3582-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2971	CROSS BOLT SPACER
1	D3508-3	WEARPLATE
1	D3508-9	WEARPLATE
1	D3508-11	WEARPLATE
1	D3508-13	WEARPLATE
1	D3558-3	GASKET
1	D3558-9	GASKET
1	D3558-11	GASKET
1	D3558-13	GASKET
1	D3584-1	WEB
3	D3662-1	CROSS BOLT SPACER
1	D3662-3	CROSS BOLT SPACER
2	D5304-1	CROSS BOLT SPACER
36	AELS-1032-130	INSERT
2	ALS7-428-165	INSERT
28	AN3C4A	BOLT
2	AN3-5A	BOLT
2	AN4-4A	BOLT
28	NAS1149C0332R	WASHER (AN960C10L)
2	NAS1149D0332J	WASHER (AN960JD10L)
2	NAS1149D0416J	WASHER (AN960JD416L)

NOTES:

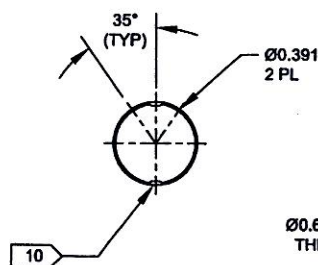
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 17.5 lbs
- 8) WELDING: PER DART QSI 004.
- 9) INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 10) USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- 11) DO NOT INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS IN INDICATED LOCATIONS.



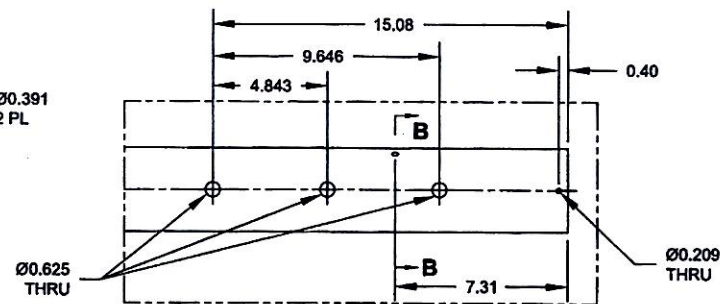
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 5X

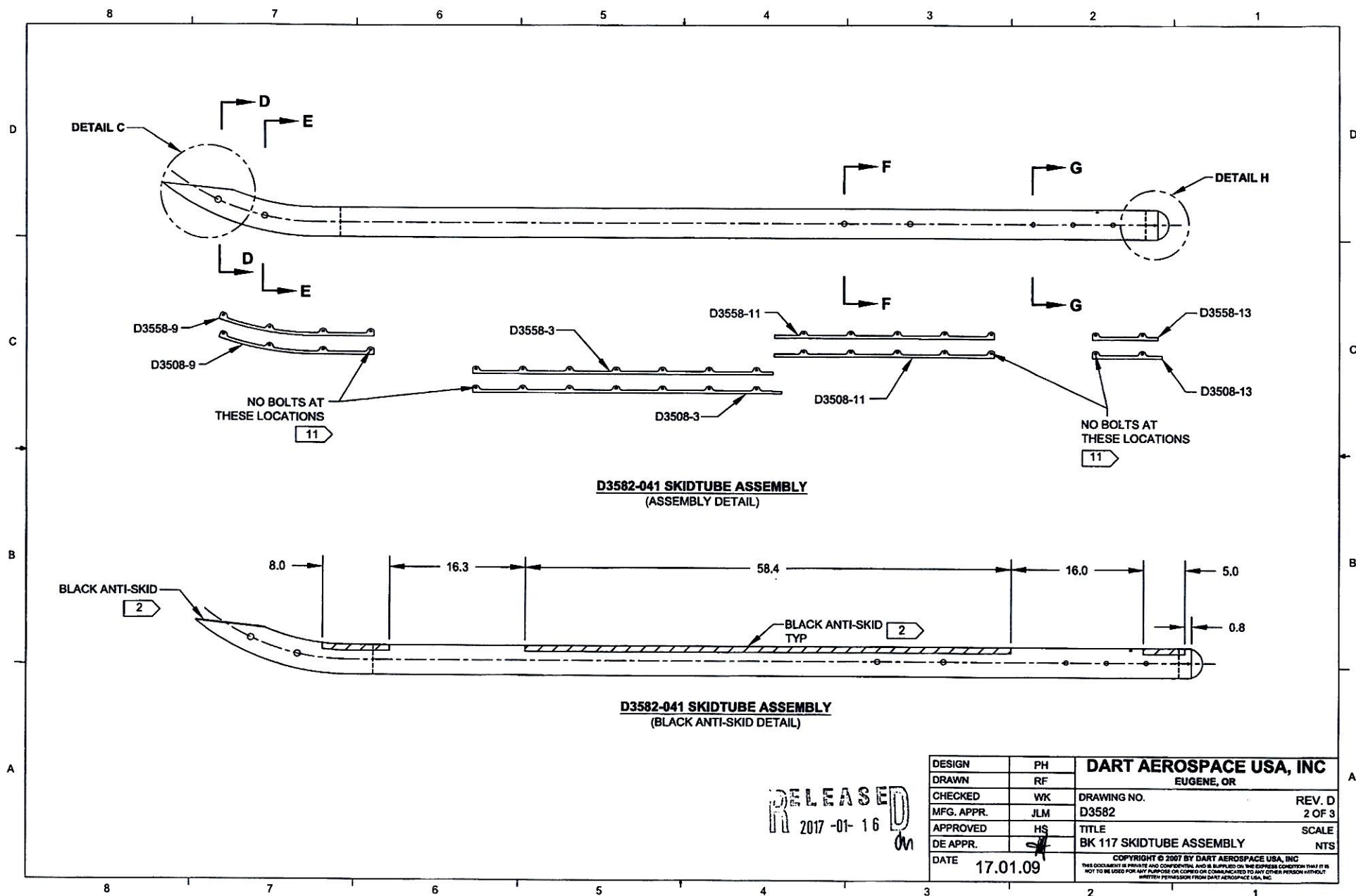


DETAIL A
SCALE 5X

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 157977 M.L.S
17 03-06

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2017-01-16
6017-506

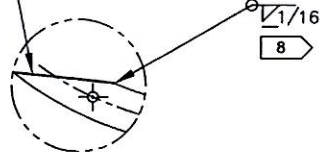
D	D5304-1 WAS D2973; REVISE BOM & SECTION F-F & SECTION NOTES (ZN B7-3, A8-3); REF NCR16-6160	RF	17.01.09
C	D3492 PLUG ASSEMBLIES REMOVED. REFORMAT NOTES SH1 1	AP	15.11.02
B	29.86 WAS 29.87 (ZN C2-1), INCORPORATED DEO D3582-A-1 (ZN D5-1), FORMAT TO CURRENT STD	RF	15.02.20
A	NEW ISSUE	PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC EUGENE, OR	
DRAWN	RF		
CHECKED	WK	DRAWING NO.	REV. D
MFG. APPR.	JLM	D3582	1 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	CH	BK 117 SKIDTUBE ASSEMBLY	NTS
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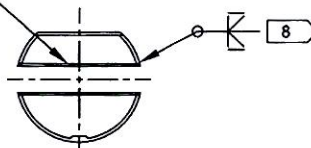
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	RF	EUGENE, OR	
CHECKED	WK	DRAWING NO.	REV. D
MFG. APPR.	JLM	D3582	2 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	SH	BK 117 SKIDTUBE ASSEMBLY	NTS
DATE	17.01.09	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

D2964 CAP
(GRIND FLUSH)



DETAIL C

D2971 SPACER



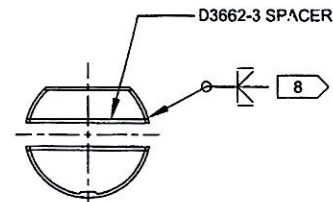
SECTION D-D

SCALE 3X

SECTION D-D NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER



SECTION E-E

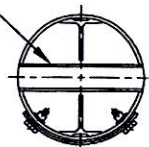
SCALE 3X

SECTION E-E NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER

D5304-1 SPACER
2 PL



SECTION F-F

SCALE 3X
2 PL

SECTION F-F NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. INSERT D5304-1 SPACER
2. SWAGE TO Ø0.565 +0.005/-0.000 X 1.0
DEEP PER QSI 002
3. OPEN THRU HOLE TO Ø0.625
4. GRIND FLUSH

D3584-1 WEB
REF

D3662-1 SPACER
3 PL

10 AFTER FINISH, INSTALL
AELS-1032-130
INSERT 36 PL

AN3C4A BOLT (1)
NAS1149C0332R WASHER (1)
28 PL

10

SECTION G-G

SCALE 3X

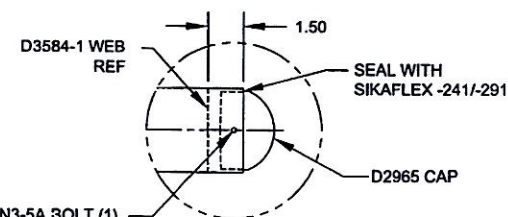
SECTION G-G NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER

AFTER FINISH, INSTALL
ALS7-428-165 INSERT (1)
AN4-4A BOLT (1)
NAS1149D0416J WASHER (1)
2 PL

8



DETAIL H

9

AN3-5A BOLT (1)
NAS1149D0332J WASHER (1)
2 PL

DESIGN		PH		DART AEROSPACE USA, INC	
DRAWN		RF		EUGENE, OR	
CHECKED		WK		DRAWING NO.	
MFG. APPR.		JLM		D3582	
APPROVED		HS		TITLE	
DE APPR.		SH		BK 117 SKIDTUBE ASSEMBLY	
DATE		17.01.09		REV. D	
				3 OF 3	
				SCALE	
				NTS	

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